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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,137	01/05/2006	Jaan Leis	0208/75364-PCT-US/RDK	9375
23432 7590 07/31/2008 COOPER & DUNHAM, LLP 1185 AVENUE OF THE AMERICAS NEW YORK, NY 10036			EXAMINER GREGORIO, GUINEVER S	
			ART UNIT 4162	PAPER NUMBER
			MAIL DATE 07/31/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/554,137	Applicant(s) LEIS ET AL.	
	Examiner GUINEVER S. GREGORIO	Art Unit 4162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 2, 4, 5, 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/20/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 2, 4, 5, and 6 are objected to because of the following informalities:

Claim 2 recites "claim1". It appears that this may be a typographical error where the applicant meant "claim 1". Additionally, claim 2 recites "1000m²/g" which appears to be a typographical error.

Claim 4 recites "1[,2 or 3],". It appears that this may be a typographical error where the applicant meant "1, 2, or 3".

Claim 5 recites "0.6g/cm³". It appears that this may be a typographical error where the applicant meant "0.6 g/cm³". Additionally, claim 5 recites "least85%". This appears to be a typographical error where the applicant meant "least 85%". Also, claim 5 recites "average?" The meaning of the question mark is unclear. This appears to be a typographical error where the applicant meant "average".

Claim 6 recites "than1%". This appears to be a typographical error where applicant meant "than 1%".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 recites the limitation "the porous carbon material" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 and 4 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3 of U.S. Patent No. 6,602,742 B2 in view of Mondragon et al. (U.S. Pat. No. 5,614,459). Although the conflicting claims are not identical, they are not patentably distinct from each other because U.S. Pat. No. 6,602,742 B2 claims a method of manufacturing halogenating carbon particles and using oxidizing medium such as water, nitric acid, hydrochloric acid and such reagents to enlarge the pore size if the pore size is smaller than the predetermined size. Claims 1 and 4 of Application No. 10/554,137 recites a method for enlarging pores using a liquid reagent which is absorbed by the carbon material and heated to a temperature of 800-1200°C. Although, claims 1 and 3 of U.S. Pat. No.

Art Unit: 1791

6,602,742 B2 does not specifically recite the steps for enlarging pore size, various methods for enlarging pore size is a method known in the art of activating carbons such as steam activation used in conjunction with various oxidizers. Mondragon et al. teaches a process for preparing activated carbon with a high surface area by swelling a carbon-containing material in a polar solvent containing oxidizing agents which corresponds to impregnating the carbon material with an oxidizing agent (column 1, lines 7-10). Furthermore, Mondragon et al. teaches an aqueous solution with an active agent to impregnate the raw material (column 2, lines 41-44). Furthermore, Mondragon et al. teaches the water is evaporated from the chemically impregnated material, and resulting mixture is carbonized in the absence of air (such as under nitrogen) at temperatures between 400° and 800°C., depending on the activating agent which corresponds to a temperature exceeding the oxidizing temperature for said reagent in an inert environment (column 2, lines 45-49). It would have been obvious to one of ordinary skill in the art at the time of the invention to use known method to increase the pore size of a carbon material to a desired diameter such as the method recited by Mondragon et al.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Mondragon et al. (U.S. Pat. No. 5,614,459). Mondragon et al. teaches a process for preparing activated carbon with a high surface area by swelling a carbon-containing material in a polar solvent containing oxidizing agents which corresponds to impregnating the carbon material with an oxidizing agent (column 1, lines 7-10). Furthermore, Mondragon et al. teaches an aqueous solution with an active agent to impregnate the raw material (column 2, lines 41-44). Furthermore, Mondragon et al. teaches the water is evaporated from the chemically impregnated material, and resulting mixture is carbonized in the absence of air (such as under nitrogen) at temperatures between 400° and 800°C., depending on the activating agent which corresponds to a temperature exceeding the oxidizing temperature for said reagent in an inert environment (column 2, lines 45-49).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

Art Unit: 1791

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being obvious over Maletin et al. (U.S. Pub. No. 2002/0097549 A1) and in further view of Modragon et al. and Nomoto et al (U.S. Pat. No. 6,592,838 B1).

The applied reference, Maletin et al., has common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Regarding claims 1, 4 and 7, Maletin et al. teaches known methods such as exposing at elevated temperature the nanoporous carbon to an oxidizing medium which may consist of H₂O carried by an inert gas, carbon dioxide, concentrated nitric acid or sulphuric acid

Art Unit: 1791

or other oxidizing agents (paragraph 43, lines 8-12). Furthermore, Maletin et al. teaches the effects of the elevated oxidizing medium are controllable widening of the nanopores (paragraph 43, lines 12-13). Maletin et al. does not specifically teach a method for widening pores. Nomoto et al. teaches in order to allow smaller pores to grow activation needs to be carried out quickly (column 6, lines 13-14). Nomoto et al. teaches many methods exist in the art to widen pores such as steam activation and alkali activation (column 2, lines 45). Additionally, Mondragon et al. teaches an improved method for activating carbon wherein the material is impregnated with an aqueous solution of agent, the water is evaporated from the chemically impregnated material and the resulting mixture is carbonized in the absence of air (column 2, lines 40-50). Mondragon et al. teaches the water is evaporated from the chemically impregnated material, and resulting mixture is carbonized in the absence of air (such as under nitrogen) at temperatures between 400° and 800°C., depending on the activating agent (column 2, lines 45-49) which corresponds to boiling the liquid phase and heating the impregnated material at 800-1200°C in an inert gas atmosphere. It would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the temperature higher or lower according to the optimal temperature for the oxidizing agent to perform.

Regarding claim 2, 5 and 6 Maletin et al. teaches a supercapacitor having electrodes fabricated from specially synthesized nanostructured carbon powders in which the pore sizes and the specific surface may be selectively controlled (paragraph 1, lines 2-6). Furthermore, Maletin et al. teaches electric double layer capacitors

Art Unit: 1791

(paragraph 2, line 1). Maletin et al. teaches a reasonably large specific surface area ($1000\text{-}2500\text{ m}^2/\text{g}$) and pore size of about $0.7\text{-}3\text{ nm}$. Furthermore, Maletin et al. teaches a nanoporous carbon material having a surface area of $1500\text{ m}^2/\text{g}$ according to BET measurements and a pore size of 1.5 nm preferably $0.5\text{-}1.5\text{ nm}$ which corresponds to a pore size distribution in which at least 20% of the micropores are of a size less than 1 nm (paragraph 110, lines 1-4). Maletin et al. does not specifically teach bulk density, microporosity. However, Nomoto et al. teaches activated carbon for use in an electric double layer capacitor wherein the total specific surface area is $1000\text{ m}^2/\text{g}$ or larger, the pore volume is $400\text{ }\mu\text{l}/\text{g}$ or larger for the pores larger than 12 angstrom and smaller than 40 angstrom (1.2 nm and 4.0 nm) (abstract, lines 1-8). Taking into consideration the prior art cited, the carbon particles recited by Maletin et al. would meet all the limitations stated by applicant.

Regarding claim 3, Maletin et al. teaches halogenation of carbon particles and that a process is known in the art for a preparation of mineral active carbons from metal or metalloid carbides and which corresponds to carbon powder having micropores produced by halogenation of a metal or metal carbide (claim 21, lines 2-6; paragraph 35, lines).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GUINEVER S. GREGORIO whose telephone number is (571)270-5827. The examiner can normally be reached on Monday-Thursday, 10:30-5:00 pm.

Art Unit: 1791

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gsg
July 28, 2008

/Melvin C Mayes/
Primary Examiner, Art Unit 1791